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Agricultural Memorandum No. 430

Frequency of Occurrence of 30 mm, 20 mm & 10 mm Rainfall in the years 1951-1960

Twelve stations, all with annual average rainfalls below 700 mm were examined for frequencies of occurrence of 30 mm, 20 mm and 10 mm of rain in 1, 3 and 7 days.
No consistent regional variation in frequency could be established for the yearly totals.
In general there was some dependence on annual averages, but this tended to vanish in the lower frequencies.
Smoothing of the results gave the following results:-
(R = annual average rainfall in millimetres)

30 mm

In 1 day, In 3 days	no recognizable variation with annual average
In 7 days	0.72R - 107

20 mm

In 1 day	no recognizable variation with annual average
In 3 days	0.35R - 28
In 7 days	1.17R + 56

10 mm

In 1 day	0.19R + 33
In 3 days	0.81R + 153
In 7 days	1.41R + 771

The results are shown in the Appendix, with values for 5 days interpolated.

Any comments or suggestions should be referred to the author.

L P Smith
Meteorological Office
Bracknell

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Frequency of Occurrence in 10 years (smoothed)

Average Annual Rainfall	30 mm				20 mm				10 mm			
	1	3	5	7 days	1	3	5	7 days	1	3	5	7 days
500	7	54	138	253	26	147	374	641	128	558	1017	1476
525	7	54	146	271	26	155	392	670	132	578	1044	1511
550	7	54	154	289	26	164	410	699	137	598	1072	1546
575	7	54	162	307	26	173	428	728	142	618	1100	1581
600	7	54	170	325	26	182	447	758	147	639	1128	1617
625	7	54	178	343	26	190	465	787	151	659	1156	1652
650	7	54	186	361	26	199	483	816	156	679	1183	1687
675	7	54	195	379	26	208	500	845	161	700	1211	1723
700 millimetres	7	54	205	397	26	217	520	875	166	720	1240	1760

Frequency of Occurrence in 10 years (actual)

Site	Average Annual Rainfall	1	3	7 days	1	3	7 days	1	3	7 days
Shoeburyness	515	10	63	292	37	177	669	136	564	1505
Cambridge	551	4	39	276	24	154	698	131	610	1555
Cranwell	597	9	55	311	25	178	725	125	607	1537
Gorleston	607	5	50	330	23	163	730	146	656	1684
Kew	607	6	55	337	24	177	780	157	665	1573
York	627	4	54	308	26	179	789	154	642	1676
Sprowston	645	3	38	292	20	158	758	134	659	1785
Oxford	651	9	68	443	28	239	948	183	782	1766
Durham	668	6	57	311	22	178	729	149	614	1594
Wakefield	670	8	60	371	31	217	834	170	676	1633
E. Malling	682	11	80	467	35	246	889	167	712	1691
Sandringham	691	5	36	387	20	208	901	159	742	1864

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